Hydrol. Earth Syst. Sci. Discuss., 11, C6643–C6644, 2015
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Hydrology and Earth System Sciences
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Discussions



# *Interactive comment on* "Detecting groundwater discharge dynamics from point to catchment scale in a lowland stream: combining hydraulic and tracer methods" *by* J. B. Poulsen et al.

**G.H. de Rooij (Editor)**

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Dear authors,

Both reviews were generally positive and offered constructive comments. Your response to these comments is sound, and the proposed changes to the paper will likely result in a stronger final version.

I recommend submitting a revision along these lines.

I have a few points of my own:



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p. 13112, l. 8-9: '. . . Ce . . . calculated as a weighted mean and a bulk value, respectively'. I had the impression from the previous text that only one value was calculated. Please clarify.

p. 13115, l. 22: '. . .within short distance.' This phrase does not seem toe be connected to the rest of the sentence. Please clarify.

p. 13121, l. 16-19: Significant nutrient transport can take place during overland flow (and you tried to schedule your field work to have this occur as little as possible), and by the release of iron concretions loaded with adsorbed phosphate from drain tubes. Could these phenomena be an issue in your catchment?

The localized nature of discharge into the stream can be caused by preferential flow paths in the aquifer feeding the stream, as some of your remarks suggest. Alternatively, they may reflect 'weak spots' in the stream bed that. For whatever reason, are more conductive than the rest of the bed. Your observations of stream bed features seem to suggest this might be the case.

I support your wish to keep the piezometer data and better explain their relevance in the text.

Regarding your response nr 4 to referee 2: I think this reviewer would like to know if you used a quantitative criterion to decide when pre-event concentrations were reached. When they were within 5% or 1% of the pre-event value, for instance. I am looking forward to receiving your revision.

Gerrit de Rooij Editor

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 13101, 2014.